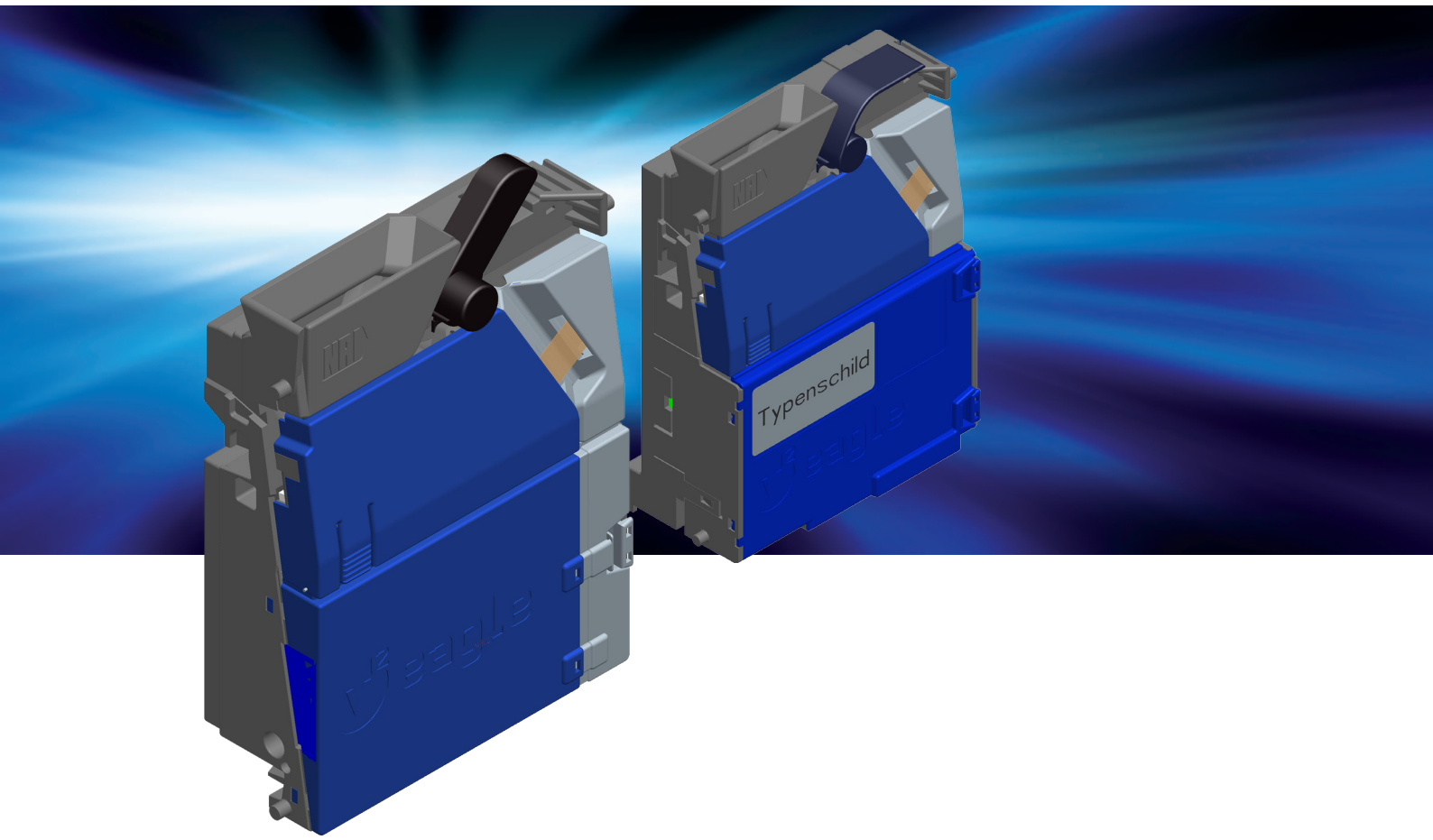
Operating Instructions



5“ Coin Validator v² eagle

with ccTalk/S1 interface

08.11 Hns/GS/Roe
BA_v2_eagle_serial_EN_1-2

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1 Revision protocol

Version	Revision	Chapters/sections concerned
_0-2	No optional on-board RS-232 interface (only using adapter)	4.3.1 "Model number decoding" 4.3.2 "Data block number decoding"
_0-3	String recognition amended	5.7 "String recognition (option)"
_1-0	• Current consumption supplemented • New optional sensors for measuring system	• 10.1 "Device data" • 4.3.1 "Model number decoding"
_1-1	Revised model number decoding	4.3.1 "Model number decoding"

2 About ...

This chapter is intended to provide a general overview of the advantages and options of the coin validator v² eagle with serial ccTalk or S1 interface. The first section, however, is designed to help you navigate easily within these operating instructions.

2.1 About these operating instructions

These operating instructions describe the design and operation of the electronic 5" coin validator v² eagle with serial ccTalk or S1 interface. Afterwards, chapters 6 and 7 explain the necessary steps for starting up and operating the coin validator. Chapter 7 describes how to clean the coin validator and remedy the cause of any malfunction.

Chap. 10 "Technical data" and the appended "Index" reduce the search for specific explanations.

2.1.1 Text conventions

To make it easier for you to navigate within these operating instructions and to operate the device, the following accentuations were made in the text:

Safety instructions which you must observe in order to protect operators and equipment.

Special notes intended to facilitate the use of the coin validator.

At the beginning of each chapter you will find a short "guide" which summarizes the contents of the chapter.

Device functions which are set or prepared by the manufacturer according to customer specifications and can be set or changed using our service and configuration tool *(cp. Chap. "9 What subsequent settings can be made?", p. 34)*.

1 2 3 ... **Requests to perform an action** are numbered in another typeface.

[Fig. 1/2] Reference to a figure. The number preceding the slash indicates the number of the figure, the number following the slash is the number of the item in the figure.

2.1.2 Additional useful technical documentation

Apart from the operating instructions you already have, further documentation is available for the v² eagle, e.g. documentation concerning the communication protocol, configuration and spare parts. All documentation can be downloaded from the NRI homepage (www.nri.de) as pdf file.

2.2 About the v² eagle

The v²-eagle coin validator with serial ccTalk or S1 interface in the standardized 5“ format uses the patented multi-frequency technology (MFT) for reliable coin validation. Communication with the vending machine control system takes place either via the ccTalk-specified 10-pin AWP connecting plug or via the NRI-specified 10-pin S1 connecting plug. Due to these interfaces and its compact design the v²-eagle is ideally suited for slot and amusement machines; however it is also used in the transportation sector.

For coin acceptance the coin validator has 32 coin channels which – divided into 2 x 16 coin channels – can be managed in two memory blocks with different coin configurations and selected individually.

Depending on the application the coin validator can optionally be equipped with 5-fold sorting.

To be able to react as quickly as possible to new false coins and to make your individual settings, the coin validator can be configured on site in the machine using a service tool or in the workshop via a PC programming station.

Any coins or tokens not taken into account by the manufacturer can be programmed in the optional teach mode directly on the coin validator without any configuration software by inserting the coins.

2.2.1 The v² eagle features

- Reliable acceptance of genuine coins and rejection of false coins due to MFT multiple sensing of the coins inserted and evaluation of 24 measuring parameters
- Operating and manipulation safety provided by optical accepted coin sensors and sorting control in the coin validation and coin outlet area
- Acceptance speed of two coins per second
- 32 coin channels managed in two independently configured and individually selectable memory blocks (2 x 16 coin channels)
- Serial interface
  - less susceptible to faults and repairs due to reduced number of signal lines and electronic components
  - flexible and extensive communication with the machine control
  - easy transmission and control of device functions
  - possibility to connect to additional peripheral equipment
  - economical device design
- Service interface for PC programming station or on-site service tool
- Flash technology for easy and time-saving firmware updates (CXflash)

- Options
  - teach mode for three coin channels
  - string sensor
  - top or front entry, front or bottom return
  - front plate
  - 5-fold longitudinal or transverse sorting
  - 4-fold sorting adapter
  - interface for d^2 high-speed sorter (2 additional sorting chutes)
  - four different return levers depending on machine type
  - licence for updating the complete ccTalk coin and device configuration on machines with PC-based control (remote block upload)

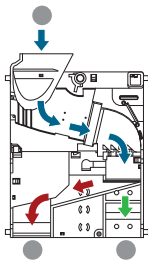
2.2.2 Models

The v^2 eagle is available in different models. They mainly differ

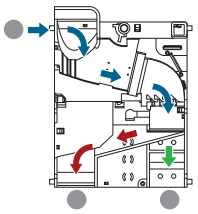
- in the coin insert and return area
- in the sorting mechanism and
- in the communication protocol.

2.2.2.1 Coin entry and return area

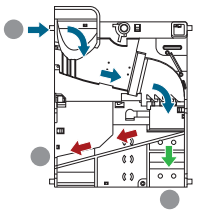
- Top entry and bottom return (E**1**xxxx. ../E**2**xxxx. ..)
  The coin is inserted into the device from the top and returned, if not accepted, via the return area at the bottom.



- Front entry and bottom return (E**3**xxxx. ..) (not in combination with transverse sorting)
  The coin is inserted into the device from the side and returned, if not accepted, via the return area at the bottom. The coin validator with front entry generally has an NRI front plate fitted to the left-hand side of the device *(cp. Chap. "10.3 Accessories", p. 42)*. However, this model is also available without front plate.



- Front entry and front return (E**4**xxxx. ..) (not in combination with transverse sorting)
  The coin is inserted into the device from the side and returned, if not accepted, via the return area also located on the side. The coin validator with front entry and front return generally has an NRI front plate fitted to the left-hand side of the device *(cp. Chap. "10.3 Accessories", p. 42)*. However, this model is also available without front plate.



2.2.2.2 Internal 5-fold sorting

In order to sort the accepted coins into the cash-box or e.g. change tubes or hoppers, the v² eagle can optionally be equipped with an internal 5-fold sorting system *(cp. Chap. "5.5 Sorting accepted coins (option)", p. 22)*:

- 5-fold longitudinal sorting (Ex**8**xxx. ..)
  The sorting chutes are arranged behind one another
- Fixed sorting chute in longitudinal sorting system
  (Ex**1**xxx. ../Ex**2**xxx. ../Ex**3**xxx. ../Ex**4**xxx. ../Ex**5**xxx. ..)
  The sorting chutes are arranged behind one another
- 5-fold transverse sorting (E**19**xxx. .., not in combination with front entry)
  The sorting chutes are arranged beside one another

2.2.2.3 Communication protocol

The coin validator communicates with the machine control via a serial protocol. The coin validator works as slave and the machine as master. Two communication protocols are possible:

- ccTalk protocol (Exxx**C**x. ..)
  Open and usable by everybody without restrictions. Another advantage consists in the remote upload, i.e. complete coin and device configurations can be loaded from a host computer to the coin validator via the ccTalk interface
  – Standard
    Protocol according to ccTalk specification.
  – ACMI
    The factory programming of the coin validator in this model meets all requirements of the Italian gaming machine act "legge 289 – comma 6“ passed in July 2003.
    The ACMI model of the v² eagle is write-protected to prevent alteration of the factory programming by means of configuration tools.

In order to meet the requirements of the Italian gaming machine act subsequent configuration of the ccTalk ACMI model is impossible. If you want to change the factory settings please contact our sales representative.

- S1 protocol (Exxx**S1**. ..)
  MDB protocol modified by NRI for the German gaming machine market. The S1 protocol differs from the MDB protocol only in the maximum voltage range (up to 28 V instead of 42 V) and the prescribed galvanic isolation of the communication lines.

3 Safety instructions

Before starting up the device for the first time, please read these instructions and in particular the safety instructions carefully at least once. This is to ensure that you have understood the contents of this manual and how to operate the coin validator.

3.1 Proper use

The electronic 5“ coin validator v² eagle with serial ccTalk or S1 interface is intended for use in gaming, transportation and change giving machines with serial ccTalk or S1 interface and is designed to check the coins inserted into the machine for specific properties and to accept (and sort) or reject them. Use the coin validator exclusively for this purpose. Under no circumstances can the manufacturer be held liable for any damage or loss resulting from improper use of the device.

The coin validator has been built in accordance with state-of-the-art standards and the recognized safety rules. Nevertheless, this equipment can constitute a source of danger. Please observe therefore the following safety instructions.

3.2 Protecting persons and equipment

The coin validator may only be connected by a qualified electrician.

Use the coin validator only in accordance with its proper use. Under no circumstances can the manufacturer be held liable for any damage or loss resulting from improper use of the device.

The coin validator PCB is fitted with components which may be damaged beyond repair by electrostatic discharges. Please observe the handling instructions for components exposed to the risk of electrostatic discharge.

Select the correct voltage for the coin validator (see label).

Never pull the connecting cable of the coin validator from the machine when a voltage is applied.

Pull the mains plug of the machine before installing, cleaning or removing the coin validator.

Contact NRI if you want to modify the device beyond the scope of the modifications or attachments described here.

Keep water and other liquids away from the coin validator.

Please dispose of the device correctly at the end of its service life.

We reserve the right to make technical modifications to the device which are not covered by these instructions!

4 Design

This chapter describes
- the main parts the v² eagle consists of, and
- all parts required for the operation of the coin validator.

4.1 Overview

of the standard model with top entry and
- longitudinal sorting or
- transverse sorting

4.1.1 v² eagle with longitudinal sorting (standard)

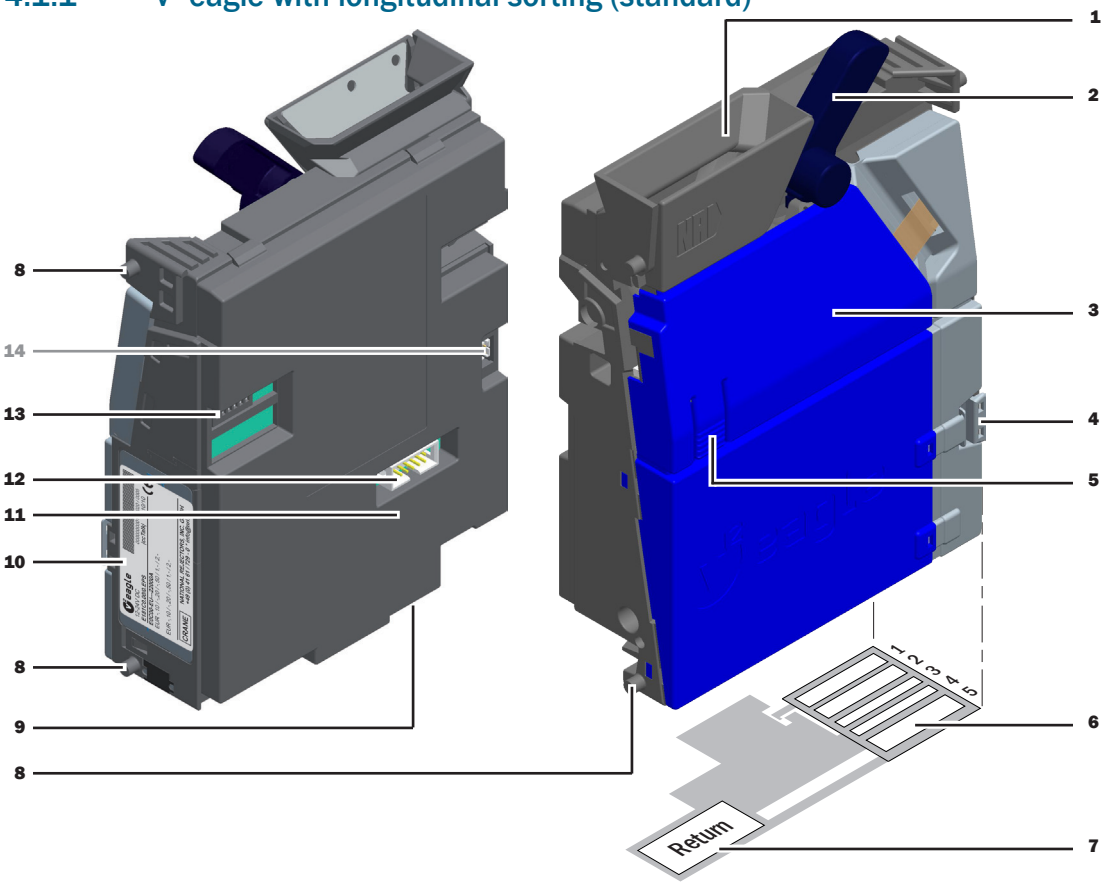


Fig. 1: Design – v² eagle with longitudinal sorting

1 Coin insert funnel (front entry model open on the side, see section "Coin path" in this chapter)
2 Coin return lever (option)
3 Flight deck
4 Locking lever for sorting cover
5 Closing device for flight deck
6 Coin outlet – cash-box/sorting
7 Coin outlet – return (for front return see section "Coin path" in this chapter
8 Mounting stud
9 Interface – service/configuration
10 Label
11 Interface – d² high-speed sorter (option, not shown)
12 Interface – machine (ccTalk/S1)
13 Switch block
14 Interface – customized

4.1.2 v² eagle with transverse sorting

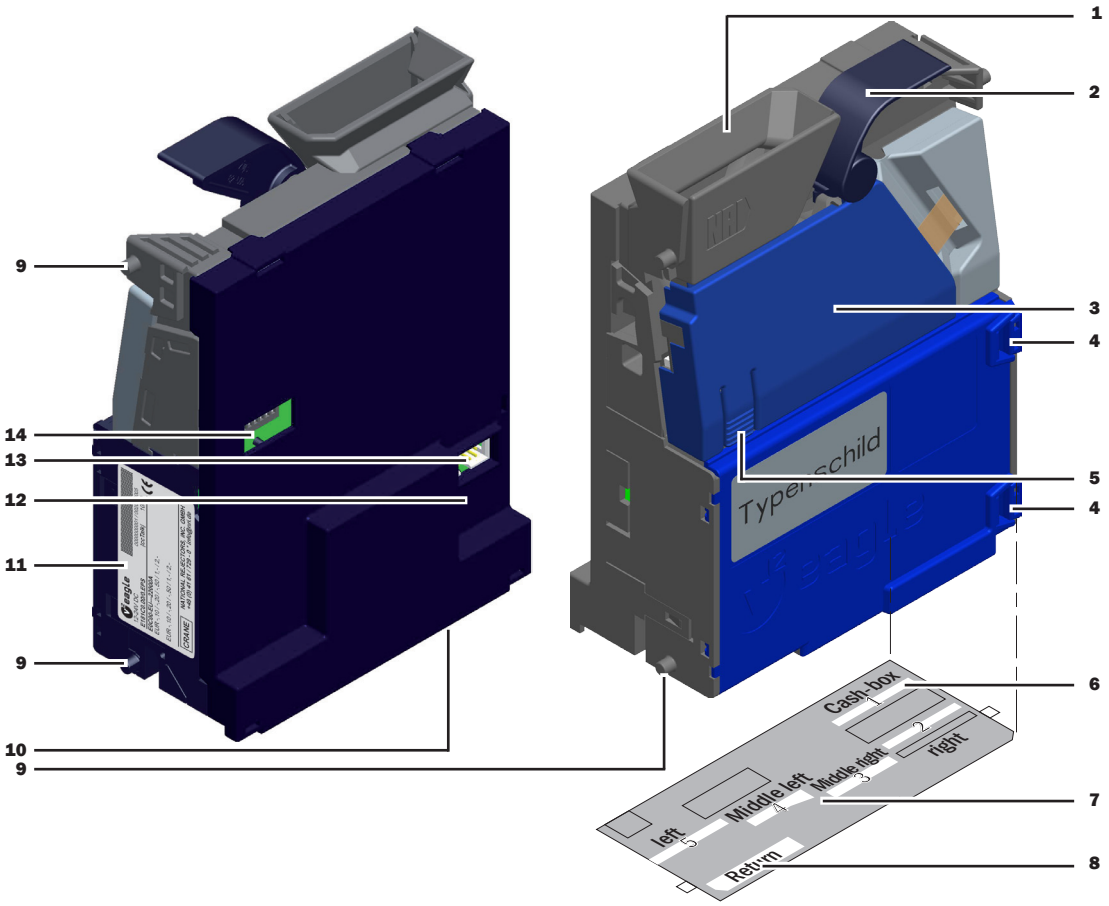


Fig. 2: Design – v² eagle with transverse sorting

1 Coin insert funnel
2 Coin return lever
3 Flight deck
4 Locking lever for sorting cover
5 Closing device for flight deck
6 Coin outlet – cash-box
7 Coin outlet – sorting (left/center, left/center, right/right)
8 Coin outlet – return
9 Mounting stud
10 Interface – service/configuration
11 Label
12 Interface – d² high-speed sorter (option, not shown)
13 Interface – machine (ccTalk/S1)
14 Switch block
15 Interface – customized

4.2 Coin path

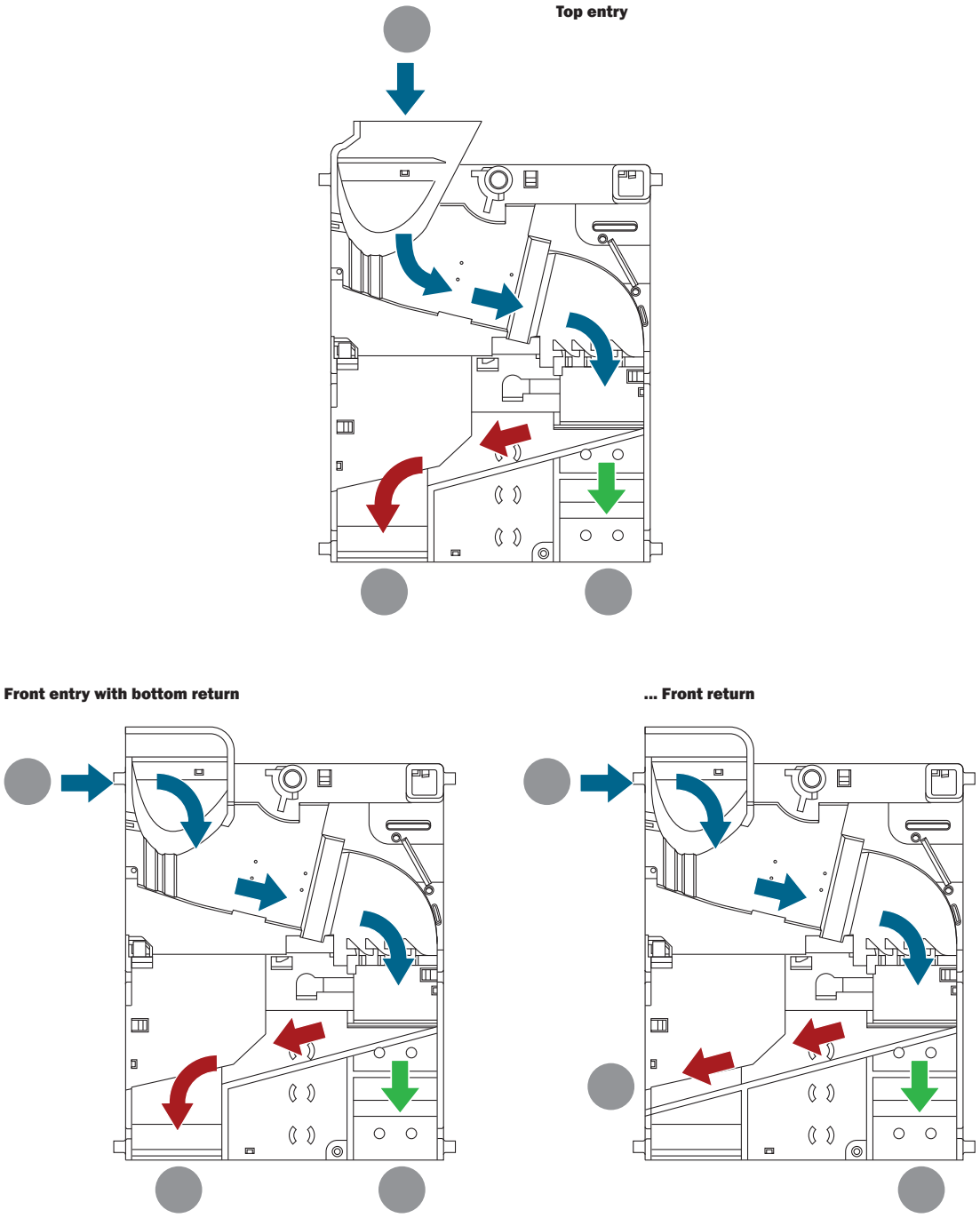


Fig. 3: Coin path

4.3 Label

The label of the coin validator [**Fig. 1**/**10**]/[**Fig. 2**/**11**] contains all data defining the device such as device number and type, operating voltage and customer-specific currency and coin programming:

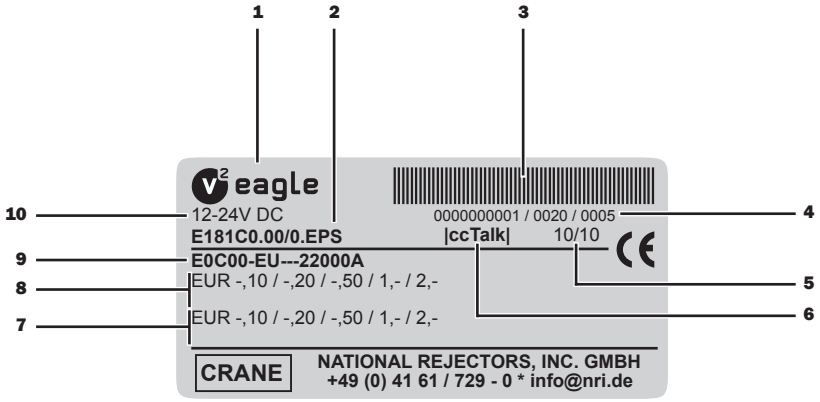


Fig. 4: Label

1 Device type
2 Model number (see next section)
3 Bar code
4 Ordering code (10-digit), order number (4-digit), device serial number (4-digit)
5 Date of manufacture
6 Machine interface
7 Coin programming – memory block 1 (if DIL switch S1 set to ON)
8 Coin programming – memory block 0 (if DIL switch S1 set to OFF)
9 Data block number *(cp. Chap. "4.3.2 Data block decoding", p. 17)*
10 Nominal voltage

4.3.1 Model number decoding

v² eagle MODEL NUMBER DECODING

EXXXXX.XX/X.XXX

Options – **D**iverter interface (currenza d²), **E**ncryption, **H**ardness sensor, **J**am sensor, **N**arrow coin entry, **O**pto sensor, **P** = Write protection, **S**tring detection, **W**ater protected, **X** = Interface for external balance — **Options**

Manufacturing process – internal option code & revision

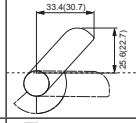
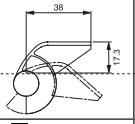
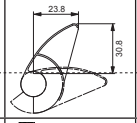
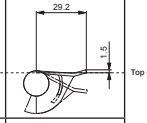
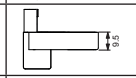
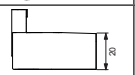
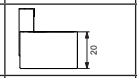
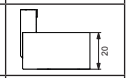
Machine interface – **C0** = ccTalk, **C1** = ccTalk with USB interface, **P4** = BDTA, **S0** = S1 - Protocol, **U0** = USBa — **Machine interface**

Coin return lever – **0** = no lever **1–4** = rf. table, **5** = rf. table, #1, bracketed dimensions, **6** = rf. table, #1, yellow, **7** = rf. table, #1, white

Sorting – **1..5** = Longitudinal sorting with fixed sorter chute 1..5, **8** = Longitudinal sorting, **9** = Cross sorting

Coin entry/outlet – **1** = Top entry, **2** = Top entry, 4th sorter chute narrowed (BDTA), **3** = Front entry/bottom return, **4** = Front entry & return — **Equipment**

v² family – **E**agle

Coin return lever #	1	2	3	4
Front view				
Top view				
Actuating angle	47°	36°	36°	21°

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Version 1.4
K.V2E-EN

4.3.2 Data block decoding

v² eagle DATA BLOCK NUMBER DECODING

EXXXX-XXXX-XXXXXX

Data block revision A–Z

3-digit consecutive number

Write protection – **0** = No protection, **1** = ACMI, **2** = VDAI, **9** = dll remote configuration

Memory block/Coin channels – **1** = 1 x 32 coin channels, **2** = 2 x 16 coin channels — **Configuration**

Second currency – **XX** = First 2 digits of ISO4217 currency code, **--** = no 2nd currency, **+2** = 2nd & 3rd currency, **+3** = 2nd, 3rd & 4th curr.

Main currency – **XX** = First 2 digits of ISO4217 currency code (EU = Euro, CH = Swiss franc, US = US dollar) — **Currency**

Hardware relevant to coin acceptance – **0** = Standard

Machine interface – **C0** = ccTalk, **C1** = ccTalk with USB interface, **P4** = BDTA, **S0** = S1 - Protocol, **U0** = USBa

Measurement variant – V**0**, V**1** — **Hardware**

v² family – **E**agle

4.4 Switch block

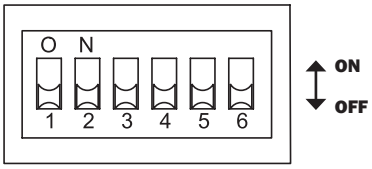
The coin validator has a switch block [**Fig. 1/13**]/[**Fig. 2/14**] with six DIL switches S1-6 on the rear of the device. The DIL switches can be used to set certain device functions:

For details on how to use the switch block to set the individual functions, see *Chap. "7 Operation", p. 28*.

On the rear of the device you will find a brief description of the individual switch functions.

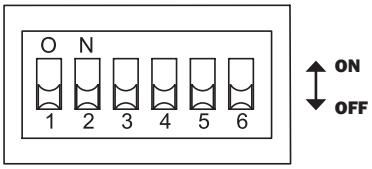
4.4.1 Switch functions on v² eagle ccTalk

DIL switch	Function	OFF	ON
S1	Memory block	0	1
S2	Defined coin channels	enabled	inhibited
S3	Teach mode	–	Teach channel 14
S4	Teach mode	–	Teach channel 15
S5	Teach mode	–	Teach channel 16
S6	Operating mode	Normal mode	Teach mode



4.4.2 Switch functions on v² eagle S1

DIL switch	Function	OFF	ON
S1	Memory block	0	1
S2	Memory block switching	S1 protocol	Coin validator switch S1
S3	Teach mode	–	Teach channel 14
S4	Teach mode	–	Teach channel 15
S5	Teach mode	–	Teach channel 16
S6	Operating mode	Normal mode	Teach mode



4.5 Coin return lever

The return lever [**Fig. 1/2**]/[**Fig. 2/2**] on the top of the device is operated using the return button on the machine when coins which have been inserted are to be returned or e.g. a jam caused by coins which have become stuck needs to be removed. Actuation of the return lever opens the measurement and validation area of the coin validator so that all objects in the coin validator are directed to the return area.

The v² eagle can be equipped with different return levers, depending on the dimensions of the machine *(cp. Chap. "4.3.1 Model number decoding", p. 17)*.

4.6 Interfaces

For details of the machine and optional sorting interfaces [**Fig. 1/11**, **12**]/[**Fig. 2/12**, **13**] please refer to *Chap. "5 Function", p. 19* and *Chap. "10 Technical data", p. 35*.

5 Function

This chapter describes how the coin validator works:

- Coin acceptance and coin channels
- Memory blocks
- Accepted coin sensor and sorting control
- Coin inhibition/activation of narrow coin channels
- Sorting of accepted coins (option)
- Teach mode (option)
- String recognition (option)

5.1 Coin acceptance and coin channels

For coin acceptance the coin validator has 32 "memory slots" to which up to 32 different coin types or tokens can be assigned. These "memory slots" are called coin channels. The acceptance band of one coin type/token is assigned to each coin channel and the respective coin type/token is accepted in this channel.

After a reset, coin acceptance is inhibited and must be enabled by the machine. By default the v² eagle refuses any further coin acceptance when it has not been addressed by a machine within a certain period of time (ccTalk protocol: last 500 ms, S1 protocol: last 2 s) or if the last coin accepted has not yet been scanned by the machine.

To enable reliable rejection of false coins, channels with a narrow or even very narrow acceptance band are frequently set up for a coin type in addition to the normal coin channel. The limit values of these coin channels are closer to one another so that false coins with similar measured values are rejected, if the normal channel is inhibited *(cp. Chap. "7.2 Inhibiting coins/activating narrow coin channel (only c2 eagle ccTalk)", p. 29)*. Narrow and very narrow coin channels, however, also feature a lower acceptance rate.

In addition, it is possible to assign coins with different measured values but identical coin values to different coin channels. In this way the coin validator can accept e.g. old and new coins of the same denomination.

In addition to the acceptance band of a coin type, further coin information which defines further processing of the coin after its acceptance is assigned to a coin channel: e. g. the coin value or sorting information for a sorting device.

Since in most cases not all coin channels are assigned by customized factory programming, further coin types and the desired information can be assigned to these free channels at any time using the NRI configuration and service tools. Existing configurations can be changed.

Three coin channels are intended to be used for the teach mode. In these teach channels new tokens/coin types can be taught also without configuration and service tools, directly on the coin validator using the switch block; i. e. a new coin or token is assigned to a channel *(cp. Chap. "5.6 Teach mode (option)", p. 26)*.

5.2 Memory blocks

The v² eagle manages two separately programmed (memory) blocks 0 and 1 *(cp. Chap. "4.3 Label", p. 16)*. 16 coin channels with different coin types (also currencies), sorting information etc. can be assigned to each block. Only one block at a time can be active and used for coin measurement and further coin processing. You can use the switch block on the device to select the desired block. S1 control systems can select the memory block also via the protocol *(cp. Chap. "7.1 Selecting the memory block ...", p. 28)*.

5.3 Accepted coin sensor and sorting control

To ensure that accepted coins actually arrive in the cash-box or sorting device and that acceptance has not been tampered with, an accepted coin sensor (light barrier) and a sorting control (light barrier) check whether the inserted coin drops unhindered through the coin outlet towards the cash-box or sorting device. Only when the coin has passed these checking devices, either coin acceptance or, in case of tampering, an error code is transmitted to the machine.

5.4 Coin inhibition/activation of narrow coin channels

If coins are no longer to be accepted for payment on the machine you can either

- inhibit coin acceptance completely,
- inhibit all coin channels of a certain coin to ensure that this coin is no longer accepted, or
- inhibit the normal coin channel of a certain coin so that this coin is accepted only in the narrow channel.

After a reset, coin acceptance is inhibited and must be enabled by the machine. By default the v² eagle refuses any further coin acceptance when it has not been addressed by a machine within a certain period of time (ccTalk protocol: last 500 ms, S1 protocol: last 2 s) or if the last coin accepted has not yet been scanned by the machine.

5.4.1 Inhibiting all coins/individual coin channels via machine control system

The control system can

- inhibit coin acceptance completely. In this case the coin validator does not accept any coins.
- inhibit all coin channels of a certain coin, e.g. if there is no more change in an external payout unit or in case of high fraud hazard.
- inhibit the normal coin channel of a certain coin so that this coin is accepted only in the narrow channel.

How to program the inhibit or enable functions is described

- in the specification "ccTalk Serial Communication Protocol, Generic Specification“, made available on the Internet at "www.ccTalk.org“, or
- the NRI interface specification "Electronic Coin Validator G-40 S1“ made available to you on request which is based on the NAMA specification "Multi-Drop Bus/Internal Communication Protocol“.

5.4.2 Inhibiting a coin channel/coin channel group using the switch block (only v² eagle ccTalk)

As an alternative to inhibition via the control system, the ccTalk coin validator is provided with a switch for inhibiting a single coin channel or a coin channel group on site.

All coin channels assigned to this switch by customized factory programming are inhibited, e.g. channels with normal acceptance bands, so that the coins inserted are accepted in the channels with narrow acceptance bands, or the channels of a defined coin (normal, narrow, very narrow), if a coin is no longer to be accepted for payment on the machine.

Chap. "7.2 Inhibiting coins/activating narrow coin channel (only c2 eagle ccTalk)", p. 29 describes how to inhibit these coin channels.

5.5 Sorting accepted coins (option)

To direct accepted coins either to the cash-box or an external sorting device, e.g. change tubes or hoppers, the coin validator can be equipped with a 5-fold longitudinal or transverse sorting mechanism at the coin outlet. The chutes are controlled via a flap sorting system using three solenoids.

The optional interface for the d^2 high-speed sorter enables controlling of two additional sorting chutes, that means a total of seven sorting chutes.

In this section you learn all about the principle of

- longitudinal sorting
  - without sorting adapter
  - with sorting adapter
- transverse sorting
- longitudinal or transverse sorting with additional d^2 high-speed sorter

5.5.1 Sorting principle of 5-fold longitudinal sorting (Ex8xxx. ..)

The individual coin types can be distributed to the five chutes arranged behind one another independent of their dimensions. Each chute can be defined as cash-box chute.

Which coin is sorted into which of the up to four chutes is determined by customized factory programming.

5.5.1.1 ccTalk sorting

For the event that a payout unit transmits a 'full' signal to a ccTalk coin validator, up to three spare sorting chutes can be defined for each coin programmed in a ccTalk coin validator in addition to the main sorting chute. When a payout unit is full, the coins are sorted into these chutes. Using the commands 222/221 "Modify Sorter Override Status"/"Request Sorter Override Status" you can inhibit the sorting chute of the full payout unit so that the coins can be sorted into the next sorting chute (cf. ccTalk Specification).

These (spare) sorting chutes are also programmed in the factory according to the customer's specifications or set via the machine control system. If all sorting chutes defined for a coin signal "Tube full", the coin is directed into the cash-box (ccTalk default sorting chute).

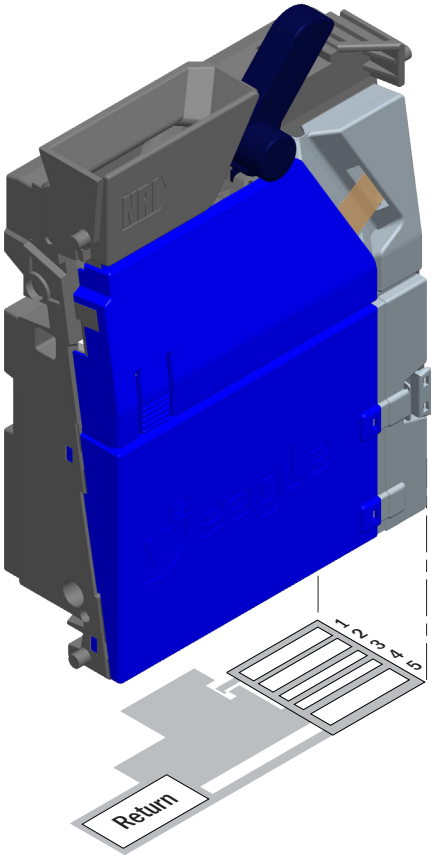


Fig. 5: Sorting chute 1–5 of longitudinal sorting system

The following table shows which sorting chute is assigned to which ccTalk sorter path:

v²-eagle sorting chute	ccTalk sorter path
1	2
2	3
3	4
4	5
5	1

In principle, the ccTalk protocol can address eight sorter paths, however for the v² eagle ccTalk only five paths are provided.

5.5.1.2 Sorting with NRI 4-fold sorting adapter (manifold)

For the purpose of splitting-up and for better transport of the sorted coins you have the option of an NRI 4-fold sorting adapter (manifold) which can be screwed to the coin validator from the bottom. This adapter is primarily used in AWP and SWP slot machines.

If the manifold is installed, four sorting chutes are available *(cp. Chap. "10.3 Accessories", p. 42)*.

Which coin is sorted into which of the up to four adapter chutes is determined by customized factory programming. The chute to be the cash-box chute (ccTalk default sorting chute) is set via the machine control system.

The following table shows which manifold chute corresponds to which coin validator chute and to which ccTalk sorter path:

Manifold chute	v²-eagle sorting chute	ccTalk sorter path
A	3	4
B	2	3
C	1	2
D	5	1

In principle, the ccTalk protocol can address eight sorter paths, however for the manifold only four paths are provided.

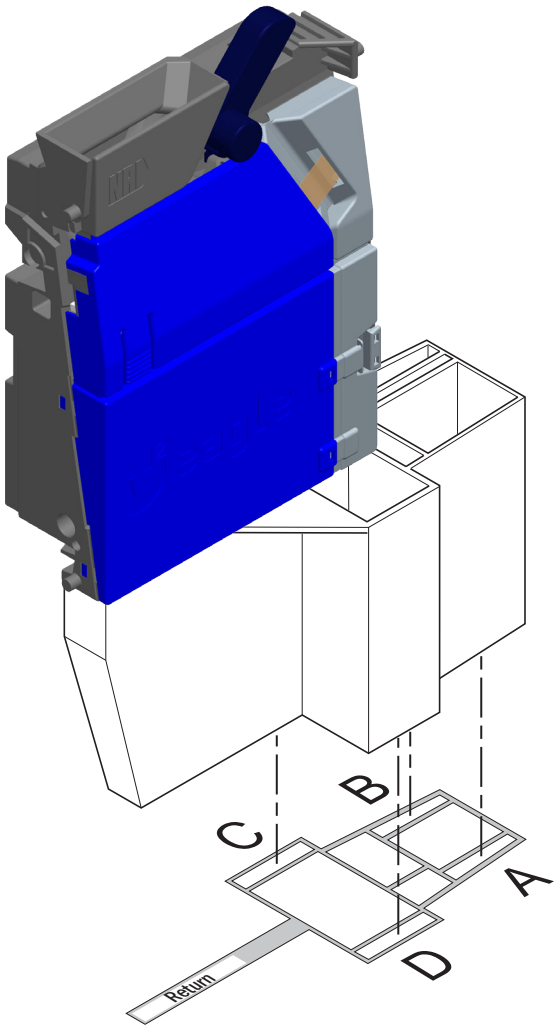


Fig. 6: Sorting chute A–D of sorting adapter

5.5.2 Sorting principle of transverse sorting (E19xxx. ..)

In case of transverse sorting the four/five sorting chutes are arranged beside one another. The cash-box chute is located behind the right-hand sorting chute.

If one of the four 'full' sensors integrated in the coin validator signals that a connected change tube is full, the coin drops into the cash-box. Only when payments have been made from this tube, coins are sorted again into this tube. If the same type of coin is to be sorted into two or more tubes, first the left tube is filled and payments are made from the right tube.

The chute into which the individual coins are sorted depends on the chute diameter:

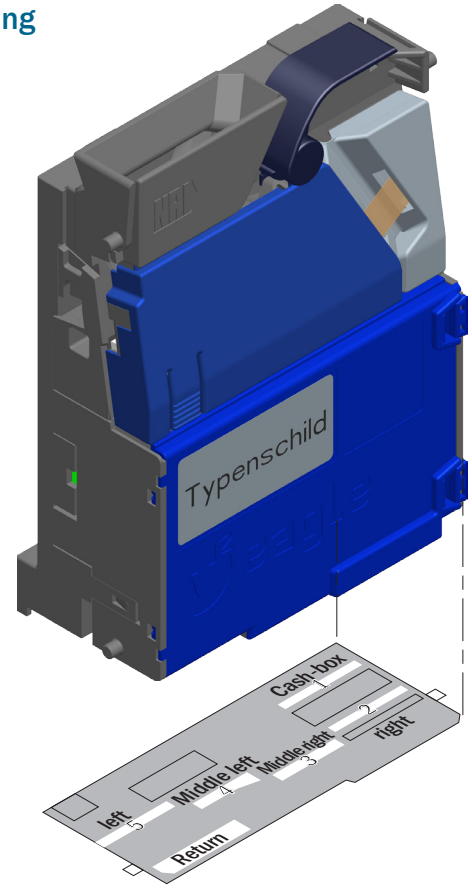


Fig. 7: Sorting chutes of transverse sorting system

v2-eagle sorting chute	left	middle left	middle right	right
Diameter max. (mm)	29	23.5	26	32

Which coin is sorted into which of the four sorting chutes is determined by customized factory programming or set via the machine control system.

5.5.2.1 ccTalk sorting

The default sorter path 1 is programmed to be the cash-box chute and cannot be changed.

For each coin programmed in a ccTalk coin validator up to three spare sorting chutes can be defined in addition to the main sorting chute, into which the coins are sorted when a change tube is full. When a 'full' sensor in the coin validator transmits a 'full' signal, you can direct the coin either into one of the these spare sorting chutes or into the cash-box using the command 221 "Request Sorter Override Status“, provided redirection has not been activated via the command 222 "Modify Sorter Override Status“ (cf. ccTalk specification).

These (spare) sorting chutes are also programmed in the factory according to the customer's specifications or set via the machine control system. If all sorting chutes defined for a coin signal "Tube full", the coin is directed into the cash-box (ccTalk default sorting chute).

The following table shows which sorting chute is assigned to which ccTalk sorter path:

v²-eagle sorting chute	ccTalk sorter path
Cash-box	1, 6–8
Tube, left	5
Tube, middle left	4
Tube, middle right	3
Tube, right	2

In principle, the ccTalk protocol can address eight sorter paths, however for the v² eagle ccTalk only five paths are provided.

5.5.3 Additional d² high-speed sorting (option)

If your coin validator is equipped with a 10-pin sorting interface below the machine interface on the rear side, you can connect an additional NRI sorter: the d² high-speed sorter with three sorting chutes and monitored coin inlet and outlet. The d² is installed by the customer underneath a longitudinal or transverse sorting system in such a way that two additional sorting chutes are available.

Since the sorting chutes of the longitudinal sorting system can sort all coins independent of their dimensions, any sorting chute can be used to pass the coins to the additional sorter. In case of transverse sorting the cash-box chute should be used.

For the pin assignment of the sorting interface please refer to *Chap. "10.2.2 Pin assignment, v2 eagle – d2 high-speed sorter (option)", p. 41*. The mounting dimensions are stated in the separate d² data sheet.

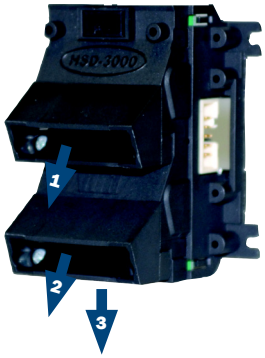


Fig. 8: d² high-speed sorter

5.6 Teach mode (option)

If the v² eagle has been programmed accordingly in the factory, coin channels can be taught in the teach mode without configuration software either via the switch block on the coin validator or via the ccTalk machine control system, i. e. a new token or coin is assigned to a coin channel. The new acceptance band is generated by inserting the tokens/coins. It is not necessary to remove the coin validator from the machine for this purpose. The last three coin channels 14–16 (= teach channels) of the activated memory block are available for teaching *(cp. Chap. "7.3 Teaching coin channels in teach mode (optional)", p. 30)*.

5.7 String recognition (option)

To ensure that no coins suspended from a string can be inserted into the coin validator or that the acceptance gate cannot otherwise be tampered with, the coin validator can be equipped with an optical sensor (cannot be retrofitted) in the acceptance area which recognizes both tight and loose strings.

The construction of the acceptance gate (dismounted in figure) makes the string go through the light beam between the two optical sensors. If the acceptance gate is completely closed, the string lengthens the light signal. If the acceptance gate is slightly open (tight string), the light beam is directly interrupted by a flag on the accpetance gate.

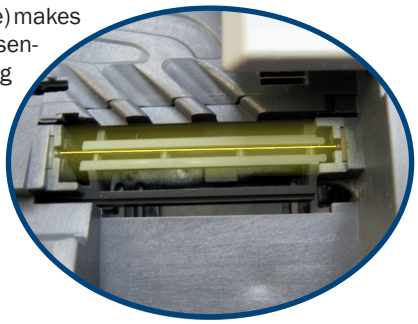


Fig. 9: Section – String recognition

If the sensor recognizes a string, the coin validator transmits an error message

- ccTalk coin validator: error code 20 "Coin-on-String Mechanism activated"
- S1 coin validator: error code 01 (hex) "String Detection is or was active"

and the coin is not accepted. At first, coin acceptance is inhibited for 30 seconds. If the string is not removed within this time period and the sensor continues to recognize it, coin acceptance remains inhibited and in addition all "jammed coins" are automatically released.

Sensitivity of the string sensor

To enable faster testing of the string sensor for functioning, coin acceptance is not inhibited when diagnosis is performed. When the string sensor is activated only an error code is transmitted.

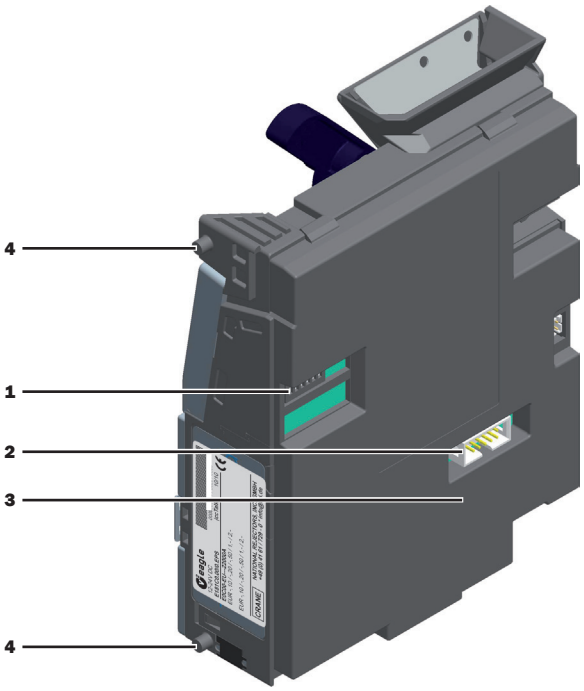
6 Start-up

For all installation work on the coin validator or the machine please observe the following safety instructions:

- **The coin validator may only be connected by a qualified electrician.**
- **The coin validator is not suited for outdoor use.**
- **Do not use the coin validator if the device or connecting cable are damaged .**
- **Make sure that the correct supply voltage is connected (see label).**
- **Never pull the connecting cable of the coin validator from the machine when a voltage is applied.**
- **Pull out the machine's mains plug before you install or remove the coin validator.**

To install the v² eagle in a machine with ccTalk or S1 interface:

1. If necessary make individual settings via the switch block [**Fig. 10/1**] *(cp. Chap. "7 Operation", p. 28)*.
2. Disconnect the machine from the mains supply.
3. Connect the coin validator to the machine using the 10-pin ccTalk/S1 interface [**Fig. 10/2**] and the appropriate connecting cable.
4. Connect the d² high-speed sorter, if any, to the coin validator using the optional sorting interface [**Fig. 10/3**].
5. Hang up the coin validator in the machine using the lateral mounting studs [**Fig. 10/4**].
6. Reconnect the mains supply to the machine.



1 Switch block
2 Interface – machine
3 Interface – d² sorter (option, not shown)
4 Mounting stud

Fig. 10: Installation

7 Operation

This chapter describes how to operate the coin validator, i. e. set certain functions on the coin validator:

- Selecting the memory block
- Inhibiting coins/activating narrow coin channel
- Teaching coin channels in teach mode (option)

The settings which are made directly on the coin validator are described. A separate instruction manual describes how to make settings using the PC configuration software heartbeat *(cp. Chap. "9 What subsequent settings can be made?", p. 34)*.

Chap. "5 Function", p. 19 describes the functions of the adjustable device options.

7.1 Selecting the memory block ...

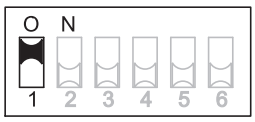
If the coin validator is to access the other memory block and e.g. accept euro coins instead of the national currency coins, the correct block can be selected using the lower switch block:

The setting may vary depending on the communication protocol:

7.1.1 ... v² eagle ccTalk

1. Unhook the coin validator from the machine.
2. For memory block 1 set DIL switch S1 to ON (up), for memory block 0 set DIL switch to OFF (down).

Memory block 0 selected



Memory block 1 selected

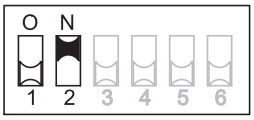
3. Remount coin validator in the machine.
4. Switch power off and on again.
   The required memory block is activated.
5. Check coin acceptance of the new memory block selected.

7.1.2 ... v² eagle S1

The required memory block can be selected either from the machine via the serial data bus or on the coin validator. The switch block on the rear of the device is used to determine whether the machine or the coin validator shall be used to select a memory block. If the coin validator is selected, the switch block is also used to select the memory block to be activated.

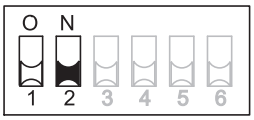
7.1.2.1 Select memory block using the machine

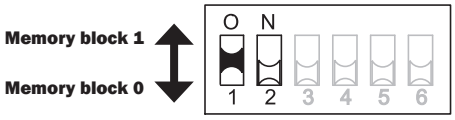
1. Unhook the coin validator from the machine.
2. Set DIL switch S2 to ON (up).
3. Remount coin validator in the machine.
4. Switch power off and on again.
   The coin validator has now been set for selection of the memory block 0 or 1 via the serial data bus.
5. Check coin acceptance of the new memory block selected.



7.1.2.2 Select memory block on coin validator

1. Unhook the coin validator from the machine.
2. Set DIL switch S2 to OFF (down).
   Memory block 0 or 1 can now be selected using DIL switch S1 on the coin validator.
3. For memory block 1 set DIL switch S1 to ON (up), for memory block 0 set DIL switch to OFF (down).
4. Remount coin validator in the machine.
5. Switch power off and on again.
   The required memory block is activated.
6. Check coin acceptance of the new memory block selected.

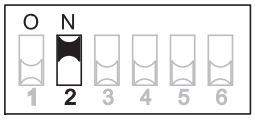




7.2 Inhibiting coins/activating narrow coin channel (only c² eagle ccTalk)

To inhibit the coin channels assigned to DIL switch S2:

1. Unhook the coin validator from the machine.
2. Set DIL switch S2 to ON (up).
3. Remount coin validator in the machine.
4. Switch power off and on again.
   All coin channels assigned to the DIL switch in the factory or via heartbeat are inhibited for coin acceptance.
5. Test coin acceptance.



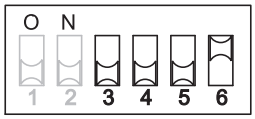
7.3 Teaching coin channels in teach mode (optional)

If the v² eagle has been programmed accordingly in the factory, a token or a new coin can be assigned to a coin channel using either the switch block on the coin validator or ccTalk commands and a service menu of the machine.

7.3.1 ... using the switch block on the coin validator

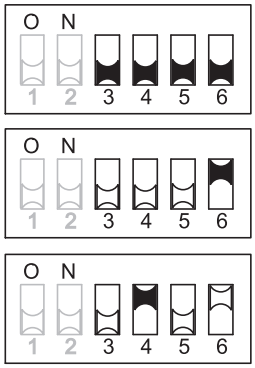
To generate new acceptance bands, up to three coin channels (teach channels) can be taught using the switch block on the coin validator. You need at least ten coins of the new type. The following DIL switches have the following functions:

DIL switch	Function	OFF	ON
S3	Teach mode	–	Teach channel 14
S4	Teach mode	–	Teach channel 15
S5	Teach mode	–	Teach channel 16
S6	Teach mode	OFF	ON



Proceed as follows to assign a new coin/token to coin channel 14, 15 or 16:

1. Unhook the coin validator from the machine.
2. Set DIL switches S3-6 to OFF (down).
3. Set DIL switch S6 to ON (up).
   The device is in the teach mode for teaching the coin channels.
4. Select the coin channel to be taught (14–16, here: 15) by setting the respective DIL switch (S3–5, here: S4) to ON (up).



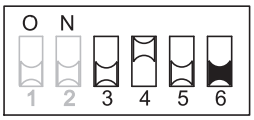
5. Insert at least 10 coins of the new coin type/token into the coin validator or machine. After the 10th coin has been inserted, the acceptance gate is operated once (brief clacking sound). Further coins can be inserted.

If there is no signal after the 10th coin has been inserted, the coins inserted cannot be used.

Now you can save the measured values generated by the inserted coins with a normal (a) or a wide (b) acceptance band. A wide acceptance band is an appropriate choice when you only have a limited selection of coins at your disposal for the purpose of teaching tokens.

To save with the normal acceptance band:

6a Set DIL switch S6 back to OFF (down).
Successful saving is signalled by the acceptance gate attracting once. A saving error is signalled by the acceptance gate attracting twice (brief cracking sounds), if e.g. the acceptance band of the coins inserted and the acceptance band of a coin channel already programmed overlap, or the measured values generated are too different and the tolerances would become too large.

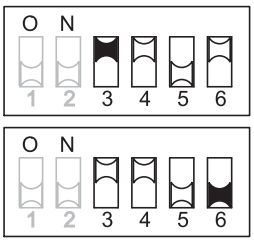


To cancel the process first set the DIL switch of the respective coin channel (S3–5, here: S4) and then DIL switch S6 to OFF (down).

To save with the wide acceptance band:

6b Set an additional DIL switch S3–5 (here: S3) to ON (up). The acceptance band has been widened.

Now you can set DIL switch S6 to OFF (down) again. Successful saving is signalled by the acceptance gate attracting once. A saving error is signalled by the acceptance gate attracting twice (brief cracking sounds), if e.g. the acceptance band of the coins inserted and the acceptance band of a coin channel already programmed overlap, or the measured values generated are too different and the tolerances would become too large.



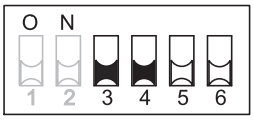
To cancel the process first set the DIL switch of the respective coin channel (S3--5, here: S4) and the additional DIL switch for the wide acceptance band (here: S3) and then DIL switch S6 to off (down).

7 Set DIL switch S3–5 to OFF again (down)

8 Remount the coin validator in the machine.

9 Switch power off and on again.

10 Enable the taught coin channel (here: 15) via the control system and adapt sorting, if necessary.



The coin validator will now accept the new coin type/token for payment.

7.3.2 ... using ccTalk commands/machine service menu

If the coin validator has been programmed accordingly in the factory and is not write-protected, coin channels can be taught using an accTalk command set *(cp. Chap. "10.2.1.7 ccTalk teach mode (option)", p. 41)* in order to create new acceptance bands. This command set can be used to start and monitor the teach mode e.g. via a service menu.

The new acceptance bands are generated and saved by inserting ten coins/tokens of the new type. After saving of the acceptance bands the coin validator will accept the new coin type/token for payment.

Fur further information about teaching of coins/tokens via the service menu please refer to the instruction manual for the machine.

Should you overwrite a configured coin channel in the teach mode, all properties assigned to this channel (e. g. coin ID, sorting etc.) must be adapted to the new coin/token (see separate heartbeat manual).

8 Maintenance and service

This chapter describes how to

- clean the v² eagle and
- remedy the cause of malfunctions.

8.1 Cleaning the coin runway

On their way through the coin validator the coins may leave residues on sensitive parts which must be removed from time to time to ensure reliable coin acceptance and rejection. Apart from this, no further maintenance work is required.

- Cleaning interval: as required, minimum once per year,
- Cleaning agent/tool: compressed air/small brush/moistened cloth, lukewarm water

Moisten the cloth only slightly to prevent fluid from entering the device. This would damage the PCB.
Do not use any solvents or scouring agents which attack the plastic material of the device.

1. Pull the mains plug of the machine.
2. Pull the coin insert funnel [Fig. 11/**1**] at the front and open the flight deck widely - beyond the first stop.
3. Clean the coin runway in the coin validator using compressed air/brush or a cloth.
4. Remove dust and coin residues from the validation area using cloth/brush or compressed air.
5. Wipe the two sides of the coin runway clean using a slightly moistened cloth.
6. Allow all parts to dry.
7. Close flight deck and press closing device [Fig. 11/**2**] so that the flight deck audibly clicks into place.
8. Reconnect the machine to the mains supply.

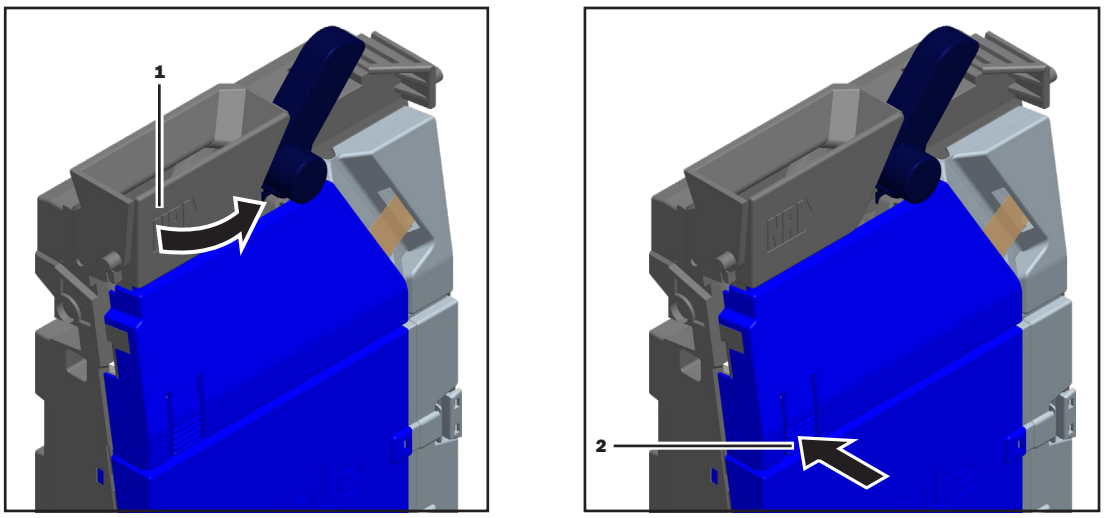


Fig. 11: Opening and closing the flight deck of the coin validator

8.2 Troubleshooting

Malfunctions can occur in all electronic devices. These do not always have to be faults in the device.. In many cases improper connections or incorrect settings are the reason. Therefor: please check first of all whether the malfunction can simply be remedied using the following table.

Problem	Possible cause	Remedy, hints
Coin validator does not accept coin	No power supply	• Connect cable to validator and machine correctly • Supply machine with voltage
	Return lever pressed/got stuck	Ensure that return lever is not permanently pressed by error
	Coin runway dirty	Open flight deck and clean coin runway *(cp. Chap. "8.1 Cleaning the coin runway", p. 32)*
	Flight deck not locked	Make sure that the flight deck is locked properly by pressing the closing device *(cp. Chap. "8.1 Cleaning the coin runway", p. 32)*
	Coin inhibited	• Make sure that machine control system does not inhibit coin acceptance • Only v² eagle ccTalk: make sure that the coin is not inhibited using DIL switch S2 on the rear of the device, or that not only the narrow coin channel is enabled and the normal one is inhibited *(cp. Chap. "7.2 Inhibiting coins/activating narrow coin channel (only c2 eagle ccTalk)", p. 29)*
Coin validator accepts coin, but no credit is given	Coin does not exit the device	Make sure that the coin outlet is not blocked by foreign objects or devices connected to the bottom of the coin validator

If the malfunction cannot be remedied please contact our service technicians.

9 What subsequent settings can be made?

This chapter provides general information concerning the NRI service and configuration tools for the v² eagle and the device functions which can be configured subsequently.

9.1 Service and configuration tools

Depending on whether you want to configure the coin validator in the workshop or on site a PC software or a mobile service tool is recommended.

9.1.1 PC configuration software heartbeat

The PC software heartbeat serves for diagnostics and individual configuration of the new NRI coin validator generation and for updating the complete coin and device configuration using data blocks currently provided by NRI (data block upload).

The heartbeat software identifies the coin validator connected to the PC and its device-specific data and displays the data on the screen of your PC for diagnostics and configuration.

The separate software manual describes how to connect the coin validator to your PC and how to install and use the software.

9.1.2 On-site service tool HENRI⁺

For on-site configuration we recommend the HENRI⁺ service tool by which you can update the complete coin and device configuration quickly and reliably via data block upload..

The separate short reference guide describes how to connect and use the tool.

HENRI⁺ is also suitable for on-site firmware updates.

9.2 Which device functions can be set?

- Acceptance of genuine coins and rejection of false coins
  (acceptance band adjustment after insertion of genuine coins and false coins)
- Coin via channel assignment of
  - coin value
  - ccTalk Coin ID
  - ccTalk Coin Type/Position 1–16
- Sorting via
  - channel assignment of main and spare sorting channels
  - definition of a ccTalk default sorting chute
- Coin inhibition via channel assignment of DIL switch S2 (only v² eagle ccTalk)
- Sensitivity of the string sensor
- New coins/tokens
  (generation of a new acceptance band and assignment of the coin/sorting data)
- Data block upload for current coin and device data

10 Technical data

This chapter contains

- all relevant v²-eagle data
- details of machine and sorting interfaces
- information concerning v²-eagle accessories

10.1 Device data

Supply voltage	10 V to 28 V DC
Current consumption when accepting coins	Acceptance solenoid: approx. 3 W Sorting solenoid: approx. 2 W (max. 2 at the same time)
U_{Nom} = 12 V	Without sorting: approx. 400 mA (for approx. 150 ms) With sorting: approx. 400 mA (for approx. 150 ms)
U_{Nom} = 24 V	Without sorting: approx. 400 mA (for approx. 150 ms) With sorting: approx. 400 mA (for approx. 150 ms)
Temperature range	0 °C to 60 °C
Temperature change	0.2 °C/min. max.
Rel. humidity	up to 93 %
Condensation	not permitted
Machine interface	ccTalk: 9600 baud, 8-bit, N, 1, 5_V TTL, common transmitting and receiving line, active low Protocol in compliance with Generic Specification "cctalk Serial Communication", Money Controls S1: 9600 baud, 9-bit, N, 1, 5 V TTL, Tx active low, Rx active high Protocol in compliance with Interface Specification "G-40 S1", NRI (available on request) for pin assignment refer to *Chap. "10.2.1 v2 eagle – machine", p. 37*
Coin acceptance	32 coin types max. in 2 x 16 channels Coin diameter: 15–31 mm (optionally up to 32 mm, at 2.4 mm thickness max.)

for transverse sorting (in mm):

left	middle left	middle right	right
29	23,5	26	32

Coin thickness: 1.5–2.4 mm (optionally up to 3.4 mm)
Speed: 2 coins/sec

Device dimensions

Height:181.3 mm
Width:127.0 mm (+ 2 x 4.5 mm for mounting studs)
Depth:64.0 mm

Mounting position	vertical, max. deviation: ± 2°
Directives applied	EMC: 2004/108/EC EN 55 014-2 (interference resistance) EN 55 022 (interference emission) Machinery: 2006/42/EC R&TTE: 1999/5/EC (Radio and telecommunications terminal equipment) (cf. Declaration of Conformity)

10.2 Interfaces

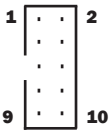
The following pages show pin assignment/connection diagram and v²-eagle-specific ccTalk commands/settings and error messages for the connection of the coin validator to

- the machine
- the d² high-speed-sorter (option)

10.2.1 v² eagle – machine

10.2.1.1 Pin assignment (v² eagle ccTalk)

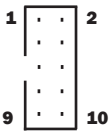
Pin	Function	Level
1	Data	active low
2	Data 0V	GND
3	-	-
4	-	GND
5	Reset	active low
6	-	-
7	Supply 12 V DC	-
8	Supply 0 V	GND
9	- (Serial Mode)	-
10	-	-



You will find a detailed description of the serial ccTalk interface with different connection diagrams in the Generic Specification "cctalk Serial Communication Protocol" available on the Internet at www.cctalk.org.

10.2.1.2 Pin assignment and connection diagram (v² eagle S1)

Pin	Function	Level
1	GND	
2	-	
3	Master Receive	active low (open collector)
4	GND	
5	Master Transmit	active high (3.3 V)
6	-	
7	-	
8	3.3 V (Output)	
9	-	
10	Supply 12 V DC	



You will find a detailed description of the serial S1 interface in the NRI Interface Specification "G-40 S1" which will be made available to you on request.

10.2.1.3 Implemented ccTalk commands

Header	Command	Function, No. of data bytes expected/returned	Optional ACMI deviations for Italian gaming machine market
255	Manufacturer-specific		
254	Simple poll	[0/0]	
253	Address poll	[0/1]	
252	Address clash	[0/1]	
251	Address change	[1/0]	
250	Address random	[0/0]	
249	Request polling priority	2, 20 (= "200 ms") [0/2]	
248	Request status	0 = OK, 1 = return lever actuated, 2 = coin on string detected [0/1]	
246	Request manufacturer ID	"NRI" [0/3]	
245	Equipment category ID	"Coin acceptor" [0/13]	
244	Request product code	"EAGLE" [0/5]	
243	Request database version	0 = remote coin database not available [0/1]	
242	Request serial number	4 bytes [0/4]	3 bytes [0/3]
241	Request software revision	"xxxyyzz" [0/7]: xxx = SW main yy = release zz = revision	
240	Test solenoids	[1/0] Bit 0: gate 0 (acceptance) Bit 1: gate 1 (internal sorter) Bit 2: gate 2 (internal sorter) Bit 3: gate 3 (internal sorter) Bit 4: upper gate (external sorter) Bit 5: lower gate (external sorter)	
236	Read opto states	[0/1] Bit 0: SO1*/SP1**/TFR Bit 1: SO2*/SP2**/TFMR Bit 2: SO3*/SP3**/TFML Bit 3: TFR Bit 4: CP3 Bit 5: CP4 Bit 6: Validator entry Bit 7: Coin entry, external sorter Bit 8: Coin exit, external sorter 0 = unblocked, 1 = blocked SO = sizing optics (measurement) SP = Sorter position (longitudinal sorter) TF = Tube full (left/mid-left/mid-right/right) * if device reports error 121 (Validation sensor blocked), bit1..3 will report state of sizing optics (SO1..3) ** if device reports error 15 (Sorter opto blocked), bit1..3 will report state of sorter feedback sensors	

Header	Command	Function, No. of data bytes expected/returned	Optional ACMI deviations for Italian gaming machine market
232	Perform self test	[0/1] 0 = no error 1 = EEPROM checksum fault (settings corrupt) 3 = Credit sensor fault 6 = Diameter sensor fault 20 = C.O.S mechanism fault 30 = ROM checksum fault (FW corrupt) 255 = unspecified fault code	
231	Modify inhibit status	[2/0]	
230	Request inhibit status	[0/2]	
229	Read buffered credit or error codes	[0/11] *(cp. Chap. "10.2.1.4 ccTalk Error Code Table", p. 40)*	
228	Modify master inhibit status	[1/0]	
227	Request master inhibit status	[0/1]	
222	Modify sorter override status	[1/0]	
221	Request sorter override status	[0/1]	
219	Enter new PIN	[4/0]	
218	Enter PIN	[4/0]	
210	Modify sorter paths	5 bytes [5/0] or 2 bytes [2/0]	2 bytes [2/0]
209	Request sorter paths	4 bytes [1/4]	1 byte [1/1]
202	Teach mode control	[1/0] *(cp. Chap. "10.2.1.7 ccTalk teach mode (option)", p. 41)*	no reply
201	Request teach status	[0/2] *(cp. Chap. "10.2.1.7 ccTalk teach mode (option)", p. 41)*	no reply
192	Request build code (incl. Write protection info)	"DE0" (no protection "DE1" (ACMII) "DE2" (VDAI) "DE2" (extra)	"IT0" (no protection "IT1" (ACMII) "IT2" (VDAI) "IT3" (extra)
189	Modify default sorter path	[1/0]	
188	Request default sorter path	[0/1]	
184	Request coin ID	[1/6], e.g. "EU200A" = 2,- €	
4	Request comms status revision	[0/3] 2, 4, 2	
1	Reset device	[0/0]	

10.2.1.4 ccTalk Error Code Table

Error no.	Error	Description (cp. spec)
0	No error	
1	Rejected coin	
2	Inhibited coin	
5	Validation timeout	
6	Credit sensor timeout	
8	2nd close coin error	
10	Credit sensor not ready	
11	Sorter not ready	
14	Credit sensor blocked	
15	Sorter opto blocked	
16	Credit sequence error	
20	Coin-on-string mechanism activated	
29	Accept gate open, not closed	
30	Accept gate closed, not open	
120*	*External light*	*Interfering light on coin position sensor or measurement sensors detected*
120*	*Validation sensor blocked*	*Coin jam in validation area or validation sensor needs to be cleaned*
120*	*Routed to wrong path*	*Sorter failed. Coin was routed to unintended path. The following coin event will report coin and (unintended) path*
254	Coin return mechanism activated	
255	Unspecified alarm code	

* *NRI-specific, not part of official ccTalk specification*

10.2.1.5 ccTalk BACTA Serial Alarms

Alarm function	BACTA code	Suplm. code	Machine alarm Message text	Data port text	Alarm type	ccTalk error no.
Status messages (do not generate an alarm)						
Inhibited coin	None	-			None	2
Coin return mechanism activated (flight deck open)	None	-			None	254
2nd close coin error (coin insertion rate too high)	None	-			None	8
Reject coin						
Reject coin (sends header only message)	Header only $1F	-			None	1
Coin mech jam						
Credit sensor blocked	80	$11	COIN MECH JAM	COIN MECH JAM	Critical	14
Coin mech fault						
EPROM checksum corrupted	81	$11	COIN MECH FAIL	MECH EEPRM FAIL		PST*
Fault on sorter exit sensor	81	$15	COIN MECH FAIL	SORTER FAULT		10
Coin mech tamper						
Credit sensor time out	82	$11	COIN MECH TAMPER	CRD SENS TIMEO	None-crit	16
Coin going backwards	82	$12	COIN MECH TAMPER	COIN BACKWARDS	Critical	17
C.O.S. mechanism activated (coin on string)	82	$13	COIN MECH TAMPER	COIN ON STRING	Critical	20
Reject coin (repeated sequential trip)	82	$14	COIN MECH TAMPER	SEQUENTIAL REJ	None-crit	24

10.2.1.6 ccTalk standard settings (after reset)

Header	Command	Active	Inactive
222	Modify sorter override	X	
228	Modify master inhibit status		X
231	Modify inhibit status	X	

10.2.1.7 ccTalk teach mode (option)

Header 202 – Teach mode control
Transmitted data: Position (1 byte)
Received data: ACK

Position: Bit 0..6: Coin type (1..16)
Bit 7: 0 = normal acceptance band
1 = wide acceptance band
Position = 0 = abort teaching process

Header 201 – Request teach status
Transmitted data: None
Received data: Byte 1 = No. of coins inserted
Byte 2 = Status code:
252 = teaching process aborted (see header 202)
253 = teaching error (overlapping with existing acceptance band, coin type not found)
254 = teaching in process
255 = teaching process completed

The status code remains active until reset or the next teaching process.

10.2.2 Pin assignment, v² eagle – d² high-speed sorter (option)

Pin	Function	Level
1	GND	GND
2	Sensor supply 12 V DC	-
3	Activate bottom switch, sorter path 2, open collector	lo
4	Activate top switch, sorter path 1, open collector	lo
5	Activate sensors, open collector	lo
6	Switch supply 12 V DC	-
7	Coin entry sensor covered/not covered	hi/lo
8	Coin outlet sensor covered/not covered	hi/lo
9	-	-
10	-	-

10.3 Accessories

To adapt the v² eagle to your individual requirements you can acquire the following accessories from NRI:

10.3.1 Front plates

Accessories	Ordering code
Front plate for front entry and bottom return	12918
Front plate for front entry and front return	10897

10.3.2 Sorting adapter

Accessories	Ordering code
4-fold sorting adapter	10402

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